COURSE OUTLINE

COMPUTER SCIENCE/INFORMATION SYSTEMS 196
Advanced Networking: Security

I. Catalog Statement

Computer Science/Information Systems 196 is a course designed to help prepare the student for industry-recognized certification in advanced networking infrastructure. This course will focus on security installation, configuration and administration in the modern networking environment.

Units—3.0
Lecture/Demonstration Hours—3.0

Recommended Preparation: CS/IS 190 or equivalent.

II. Course Entry Expectations

Skills Level Ranges: Reading 4; Writing 4; Listening/Speaking 4; Math 2.

III. Course Exit Standards

Upon successful completion of the required coursework, the student will be able to:
1. design and administer an organization's security policy;
2. design and administer secure networks;
3. use encryption methods to safeguard information;
4. detect and remove malicious content from network resources;
5. test and evaluate network security.

IV. Course Content **Total Contact Hours = 48**

A. General Security 12 hours
   1. Access Control
   2. Authentication
   3. Non-essential services and protocols
   4. Attacks
   5. Malicious Code (viruses, trojan horses, logic bombs, and worms)
   6. Social Engineering
   7. Auditing

B. Communication Security 9 hours
   1. Remote Access
   2. Email
   3. Web
   4. File Transfer
   5. Wireless Issues

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C. Infrastructure Security 12 hours
   1. Devices (Firewalls, Routers, et. al.)
   2. Media
   3. Security Topologies
   4. Intrusion detection
   5. Network, application and Operating System/Network Operating System (OS/NOS) hardening

D. Cryptography 3 hours

E. Operational and Organizational security 12 hours
   1. Physical security
   2. Disaster recovery
   3. Business continuity
   4. Policy and Procedures
   5. Privilege management

V. Methods of Presentation

The following instructional methodologies may be used in the course:
1. lecture and demonstration;
2. research projects.

VI. Assignments and Methods of Evaluation

1. Unit tests
2. Quizzes
3. Student Presentation
4. Mid-term examination
5. Final examination

VII. Textbook

Campbell, P., Boswell, S., & Calvert, B. Security+ Guide to Network Security Fundamentals. Boston: Thompson Course Technology, 2009.
12th Grade Textbook Reading Level. ISBN: 1-4238-4066-1

VIII. Student Learning Objectives

Upon successful completion, the student will be able to:

1. design and administer secure networks;
2. use encryption methods to safeguard information;
3. detect and remove malicious content from network resources;
4. test and evaluate network security.